

## **A Pilot Study in FoodNet of the Use of Stool Collection Kits Delivered to the Home to Improve Confirmation of Etiology in Gastroenteritis Outbreak Investigations**

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**Background:** In 68% of foodborne disease outbreaks reported to the Centers for Disease Control and Prevention (CDC), no etiologic pathogen is identified. In two-thirds of outbreaks of unconfirmed etiology, no stool specimens are submitted for laboratory testing. We studied the utility of using stool collection kits delivered to the homes of patients to improve rates of specimen submission and identification of an etiology in foodborne disease outbreaks.

**Methods:** CDC and Foodborne Diseases Active Surveillance Network (FoodNet) sites in California, Maryland, and Tennessee initiated a prospective pilot project to collect stool specimens using kits during gastroenteritis outbreaks. Each site designed, implemented, and evaluated easy-to-use kits specific to the needs of their populations and health department laboratories. All kits included instructions, shipping labels, transport and packaging material, and a stool collection "hat" for the toilet. Two sites used a single specimen collection container, and one site used separate bacterial and viral collection containers with different media. The sites employed commercial and health department couriers and U.S. mail to deliver and retrieve the kits.

**Results:** From April 1 to October 31, 2001, stool collection kits were deployed in 12 outbreaks (7 in Tennessee, 4 in Maryland and 1 in California), involving 248 ill persons. Kits were distributed to 59 ill persons, and 42 (71%), which included  $\geq 1$  specimen from 11 of the 12 outbreaks were returned to state laboratories. Of these, 28 were returned via courier and 14 by U.S. mail. "Inability to produce a specimen" after receiving the kit from the health department was the most common reason for non-submission. The mean time from start of the outbreak investigation to receipt of specimens at the laboratory was 4.9 days. Of the 11 outbreaks for which kits were returned, an etiologic organism was confirmed in eight (72.7%); 6 Norwalk-like virus, 1 *Staphylococcus aureus*, and 1 *Salmonella* serotype Enteritidis.

**Conclusion:** In over two-thirds of gastroenteritis outbreaks in which these stool collection kits were successfully deployed, an etiologic organism was identified. Delivery of kits to patients homes to improve rates of stool collection in outbreaks in which specimens might otherwise not be submitted could substantially reduce the number of outbreaks with an unknown etiology. However, these preliminary findings are based on a small number of outbreak investigations. The cost-effectiveness and feasibility of routine use of these kits requires further evaluation.

### **Suggested citation:**

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